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Can science be really for everybody?

Integrated instruction, integration in education, education from the point of integrated view – these and other topics are being discussed together with creating curricula and have influenced school education in numerous countries. They are connected either to the pursuit of finding undifferentiated view on the nature, or to the reduction of lessons in curricula in the framework of Ministry of Education economical measures.

The topic of the Science education integration is being influenced by populist ideas without any professional ground in those countries where the subject Science still does not belong to the primary school curricula (Grades 1 – 5). Excited discussions of both supporters and opponents of integrated science education often result in misunderstandings when speaking about preferring of integration or forestalling of early differentiation of natural science knowledge. The core of misunderstanding often lies in the exact setting of the discussion topic. There must be a difference when speaking either about maintaining Science as an integrated subject for 13/14 – 14/15-year-old pupils, or about integration of existing knowledge into Physics, Biology, Chemistry or Ecology in higher grades of grammar and other types of secondary schools. Avoiding and refusing topics like these does not lead to finding solutions.

In some countries integrated instruction in the field of natural science up to higher grade is common (e.g. subject Science in Anglo-Saxon countries), and any innovation is understood as an earlier or another way of differentiation. In other countries early differentiation has a long tradition and innovation means integration, i.e. undifferentiation.

The fate of the physics, chemistry, biology and geography education, or as they are mentioned in integrated curricula the physical, chemical, biological or geographical nature education, so far has been very uncertain. Will chemistry for example remain the only subject, which is not taught in all grades? Will there remain various nature science subjects at secondary school or will there prevail the model of one integrated nature science in the upper grades of the primary and secondary school? These are some of our expectations or questions the answers to which have not been found but we are trying to do so.

The research in the area of science education strengthens the Theory of Science Instruction (didactics) academically and enables closer connection of Physics, Chemistry and Biology, but also the connection to Pedagogy. We believe that both research projects and good practice give a chance to improve useful curricula and create the curriculum of such a quality which will lead students to understanding science and to be science literate. Can science be really for everybody?

Prof. dr. **Martin Bílek**

Member of Editorial Board of GU/NSE